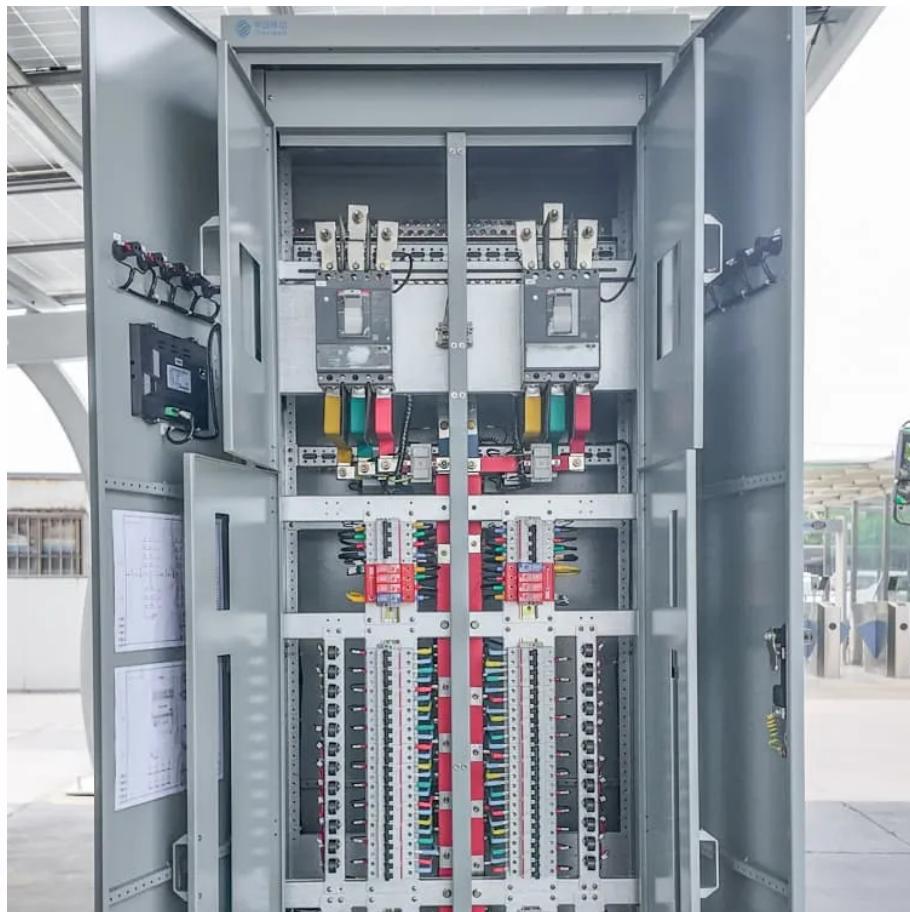




BUHLE POWER

Organic solar container battery





Overview

Are coupled organic solar batteries efficient?

Coupled solar batteries enable direct solar-to-electrochemical energy storage but show low efficiencies due to insufficient solar spectrum utilization. Here, we report the exciton-coupled redox reactions over molecular photoelectrochemical materials for wide-spectrum, high-efficiency, coupled organic solar batteries.

Are organic batteries sustainable?

These organic compounds are often derived from abundant sources, including biomass or synthetic chemistry, making them far more sustainable in origin and disposal. Organic batteries make use of organic compounds – primarily carbon-based materials – as the active components in electrochemical reactions that generate electrical energy.

What are organic batteries?

Unlike traditional LIBs that rely on inorganic electrode materials (IEMs) based on transition metals, organic batteries use organic electrode materials (OEMs) composed of abundant light elements such as C, H, O, N and S (Fig. 1b).

Are organic batteries suitable for small volume applications?

Organic batteries might be unsuitable for small volume applications or the requirements of high specific energy based on battery mass. However, organic batteries might work well as a complement to inorganic batteries, and thus, it is important to determine their most suitable applications. Fig. 4: Potential applications of organic batteries.



Organic solar container battery



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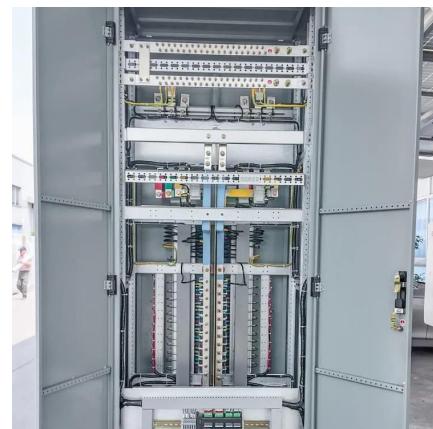
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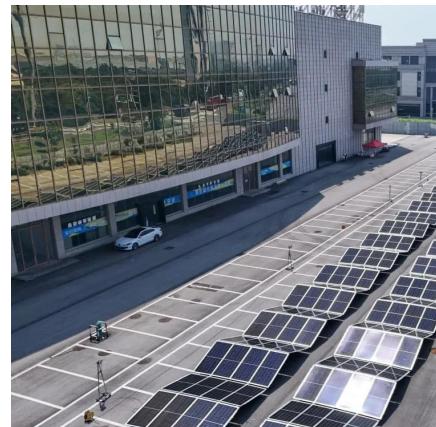
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